***Amendments***

***In the Claims:***

Please amend claims 5-7 and add new claims 10-18.

1. (Original) A multi-band helical antenna comprising:

a dielectric body including a plurality of dielectric sheets stacked in a predetermined order; and

at least a first metallic pattern section and a second metallic pattern section provided in the dielectric body, the first metallic pattern including a plurality of first partially opened metallic loop patterns and a plurality of first connection elements connecting the respective adjacent first partially opened metallic loop patterns to form a first spiral structure, and the second metallic pattern section including a plurality of second partially opened metallic loop patterns and a plurality of second connection elements connecting the respective adjacent second partially opened metallic loop patterns to form a second spiral structure, the first and the second metallic pattern sections having different entire lengths.

2. (Original) A multi-band helical antenna comprising:

a dielectric body including at least a plurality of first dielectric sheets of a first thickness t1 and a plurality of second dielectric sheets of a second thickness t2 that is different from t1, the dielectric sheets being stacked in a predetermined order; and

at least a first metallic pattern section and a second metallic pattern section provided in the first dielectric sheets and the second dielectric sheets, respectively, the first metallic pattern

section including a plurality of first partially opened metallic loop patterns spaced apart from each other by a first distance and a plurality of first connection elements connecting the respective adjacent first metallic loop patterns to form a first spiral structure, and the second metallic pattern section including a plurality of second partially opened metallic loop patterns spaced apart from each other by a second distance different from the first distance and a plurality of second connection elements connecting the respective adjacent second metallic loop patterns to form a second spiral structure.

3. (Original) A multi-band helical antenna comprising:

a dielectric body including a plurality of dielectric sheets of a predetermined thickness, the dielectric sheets being stacked in a predetermined order; and

at least a first metallic pattern section and a second metallic pattern section provided in the dielectric body, the first metallic pattern section including a plurality of first partially opened metallic loop patterns having a first radius r1 and a plurality of first connection elements connecting the respective adjacent first partially opened metallic loop patterns to form a first spiral structure, and the second metallic pattern section including a plurality of second partially opened metallic loop patterns having a second radius r2 that is different from r1 and a plurality of second connection elements connecting the respective adjacent second partially opened metallic loop patterns to form a second spiral structure.

4. (Original) A multi-band helical antenna comprising:

a dielectric body including a plurality of dielectric sheets of a predetermined thickness, the dielectric sheets being stacked in a predetermined order;

at least a first metallic pattern section and a second metallic pattern section provided in the dielectric body, the first metallic pattern section including a plurality of first partially opened metallic loop patterns having a first entire length $\ell 1$ and a plurality of first connection elements connecting the respective adjacent first partially opened metallic loop patterns to form a first spiral structure, and the second metallic pattern section including a plurality of second partially opened metallic loop patterns having a second entire length $\ell 2$ different from $\ell 1$ and a plurality of second connection elements connecting the respective adjacent second partially opened metallic loop patterns to form a second spiral structure.

5. (Amended) The antenna ~~of any one~~ of claims 1 ~~to 4~~, wherein the dielectric body has a rectangular parallelepiped shape.

6. (Amended) The antenna ~~of any one~~ of claims 1 ~~to 4~~, wherein each of the dielectric sheets has a via hole and the connection element is provided by filling a conductive material same as that of the metallic loop patterns in the via hole.

7. (Amended) The antenna ~~of any one~~ of claims 1 ~~to 4~~, wherein an adhesive layer is provided between the adjacent dielectric sheets.

8. (Original) The antenna of claim 7, wherein a barrier is provided on the dielectric sheet around each of the connection elements to prevent the adhesive from contacting the connection elements.

9. (Original) The antenna of claim 4, wherein the first and the second metallic loop patterns are alternately disposed in a vertical direction.

10. (New) The antenna of claims 2, wherein the dielectric body has a rectangular parallelepiped shape.

11. (New) The antenna of claims 3, wherein the dielectric body has a rectangular parallelepiped shape.

12. (New) The antenna of claims 4, wherein the dielectric body has a rectangular parallelepiped shape.

13. (New) The antenna of claims 2, wherein each of the dielectric sheets has a via hole and the connection element is provided by filling a conductive material same as that of the metallic loop patterns in the via hole.

14. (New) The antenna of claims 3, wherein each of the dielectric sheets has a via hole and the connection element is provided by filling a conductive material same as that of the metallic loop patterns in the via hole.

15. (New) The antenna of claim 4, wherein each of the dielectric sheets has a via hole and the connection element is provided by filling a conductive material same as that of the metallic loop patterns in the via hole.

16 (New) The antenna of claim 2, wherein an adhesive layer is provided between the adjacent dielectric sheets.

17 (New) The antenna of claim 3, wherein an adhesive layer is provided between the adjacent dielectric sheets.

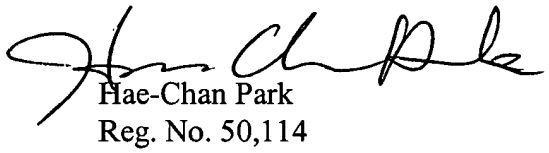
18 (New) The antenna of claim 4, wherein an adhesive layer is provided between the adjacent dielectric sheets.

## *Conclusion*

It is respectfully requested that this amendment be entered prior to the examination of the above-referenced patent application. It is believed that no new matter is added by this amendment. If the Examiner desires any additional information, the Examiner is invited to contact applicants' attorney at the telephone number listed below to expedite prosecution.

Prompt and favorable consideration is respectfully requested.

Respectfully submitted,



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